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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,176	01/15/2004	Richard Reynolds	830_012	4849

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BURR & BROWN
PO BOX 7068
SYRACUSE, NY 13261-7068

EXAMINER	
WEST, JEFFREY R	

ART UNIT	PAPER NUMBER
2857	

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/758,176	REYNOLDS ET AL.	
	Examiner	Art Unit	
	Jeffrey R. West	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 20 March 2006.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-5 and 9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5 and 9 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 20 March 2006 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Specification

2. The specification is objected to for the following issues:

On pages 12-13, and in corresponding Figure 8, the specification describes determining a "long term average (lt_jitter)" according to the following equation:

lt_jitter = (lt_jitter * P) + (abs (jitter) * (1 – P))

determining a "differential jitter" according to:

jitter_differential = abs (jitter) – lt_jitter

and, subsequently, determining a resulting mean opinion score in dependence on statistical analysis (i.e. average of a maximum/variance) of the resulting "differential jitter".

It is first unclear to one having ordinary skill in the art, how to use the provided equation to determine the long term average jitter.

The equation provided for determining the "long term average jitter" requires a long term average jitter as an input to the equation. Since there is no apparent value of long term average jitter to be used as an input for the right side of the equation, it is unclear to one having ordinary skill in the art how to use the equation as described.

With equation manipulation, the equation can further be analyzed. Using such equation manipulation, the following can be derived:

When P = 1:

$$lt\_jitter = (lt\_jitter * P) + (abs (jitter) * (1 - P))$$

$$lt\_jitter = (lt\_jitter * 1) + (abs (jitter) * (1 - 1))$$

$$lt\_jitter = (lt\_jitter) + (abs (jitter) * (0))$$

$$lt\_jitter = (lt\_jitter)$$

When $P \neq 1$:

$$lt\_jitter = (lt\_jitter * P) + (abs (jitter) * (1 - P))$$

$$lt\_jitter - (lt\_jitter * P) = (abs (jitter) * (1 - P))$$

$$lt\_jitter * (1 - P) = (abs (jitter) * (1 - P))$$

$$lt\_jitter = abs (jitter).$$

The result of the manipulation indicates that when P = 1, one having ordinary skill in the art has no way to determine the "long term average jitter" and when $P \neq 1$ the "long term average jitter" is actually the absolute value of the jitter and not any type of average.

Turning back to the specification and drawings, it is disclosed generating a resulting mean opinion score in dependence on statistical analysis (i.e. average of a maximum/variance) of the resulting "differential jitter". However, the "differential jitter (jitter_differential)" is defined as:

jitter_differential = abs (jitter) – lt_jitter

As noted above in the equation for lt_jitter, when P=1, the equation provides no useful result, but when P ≠ 1, lt_jitter = abs (jitter).

Substitution of this value in the equation for "differential jitter" reveals:

jitter_differential = abs (jitter) – abs (jitter) = 0.

Therefore the specification does not appear to adequately describe to one having ordinary skill in the art the method for determining a mean opinion score from statistical analysis of a "differential jitter" when the "differential jitter" is always zero.

Claim Objections

3. Claim 9 is objected to because of the following informalities:

In claim 9, line 8, to avoid problems of antecedent basis, "said packet" should be ---said intercepted packet---.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-5 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, because it includes a limitation for "extracting a set of parameters...generating an estimated mean opinion score in dependence upon said set of parameters; wherein the extracting step comprises the sub steps of: generating a jitter parameter...generating a long term average jitter parameter for said stored packet in dependence upon the value of said jitter parameter for said stored packet and the value of said jitter parameter for any preceding stored packets; and generating a differential jitter parameter in dependence upon the jitter parameter for said stored packet and the long term average jitter parameter."

In supporting this limitation, the specification indicates, on pages 12-13, and in the corresponding Figure 8 that the "long term average (lt_jitter)" is defined by the following equation:

lt_jitter = (lt_jitter * P) + (abs (jitter) * (1 – P))

the "differential jitter" is defined by:

jitter_differential = abs (jitter) – lt_jitter

and the resulting mean opinion score is generated in dependence on statistical analysis (i.e. average of a maximum/variance) of the resulting "differential jitter".

It is first unclear to one having ordinary skill in the art, how to use the provided equation to determine the long term average jitter.

While the term "jitter" presented in the equation does reflect "the value of said jitter parameter for said stored packet and the value of said jitter parameter for any preceding stored packets", the equation also needs a long term average jitter as an input to the equation to determine the desired long term average jitter. Since there is no apparent value of long term average jitter to be used as an input for the right side of the equation, it is unclear to one having ordinary skill in the art how to make/use the invention as claimed to "generating a long term average jitter parameter for said stored packet in dependence upon the value of said jitter parameter for said stored packet and the value of said jitter parameter for any preceding stored packets".

With equation manipulation, the equation can further be analyzed. Using such equation manipulation, the following can be derived:

When P = 1:

lt_jitter = (lt_jitter * P) + (abs (jitter) * (1 – P))

lt_jitter = (lt_jitter * 1) + (abs (jitter) * (1 – 1))

lt_jitter = (lt_jitter) + (abs (jitter) * (0))

lt_jitter = (lt_jitter)

When P ≠ 1:

lt_jitter = (lt_jitter * P) + (abs (jitter) * (1 – P))

lt_jitter – (lt_jitter * P) = (abs (jitter) * (1 – P))

lt_jitter * (1 – P) = (abs (jitter) * (1 – P))

lt_jitter = abs (jitter).

The result of the manipulation indicates that when P = 1, one having ordinary skill in the art has no way to determine the "long term average jitter" and when P ≠ 1 the "long term average jitter" is actually the absolute value of the jitter and not any type of average.

Turning back to the invention as claimed, claim 1 requires a resulting mean opinion score to be generated in dependence on statistical analysis (i.e. average of a maximum/variance) of the resulting "differential jitter". However, the "differential jitter (jitter_differential)" is defined as:

jitter_differential = abs (jitter) – lt_jitter

As noted above in the equation for lt_jitter, when P=1, the equation provides no useful result, but when P ≠ 1, lt_jitter = abs (jitter).

Substitution of this value in the equation for "differential jitter" reveals:

jitter_differential = abs (jitter) – abs (jitter) = 0.

Therefore it is unclear to one having ordinary skill in the art how to make/use the invention as claimed to determine a mean opinion score from statistical analysis of a "differential jitter" when the "differential jitter" is always zero.

Claim 9 is similarly rejected under 35 U.S.C. 112, first paragraph, for its recitation of "means for extracting a set of parameters...means for generating an estimated mean opinion score in dependence upon said set of parameters; wherein the means for extracting further comprises means for generating a jitter parameter...means for generating a long term average jitter parameter for said stored packet in dependence upon the value of said jitter parameter for said stored packet and the value of said jitter parameter for any preceding stored packets; and means for generating a differential jitter parameter in dependence upon the jitter parameter for said stored packet and the long term average jitter parameter."

Claims 2 and 3 are also rejected as lacking enablement because they include limitations for determining a maximum value and variance value, respectively, of "said plurality of said differential jitter parameters". As noted above, however, the resulting "differential jitter parameter" as explicitly defined in the specification always produces a value of zero. Therefore, it is unclear to one having ordinary skill in the art how to use the invention as claimed to generate a pertinent mean opinion score for a maximum value, or variance value, of a sequence of zero values.

Claims 4 and 5 are rejected under 35 U.S.C. 112, first paragraph, because they incorporate the lack of enablement present in their respective parent claims.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 is considered to be vague and indefinite because in claim 9, line 14, reference is made to "means for generating a jitter parameter for each of a sequence of stored packets". Claim 9, however, already presents "means for storing a sequence of intercepted packets associated with a call...means for extracting a set of parameters from said sequence of intercepted packets". Therefore, it is unclear to one having ordinary skill in the art as to whether the "means for generating a jitter parameter for each of a sequence of stored packets" refers to the previously presented "sequence of intercepted packets associated with a call" or with a different sequence of stored packets. Also, since the previous limitation of "means for storing a sequence of intercepted packets associated with a call" only stores one sequence of packets, it unclear whether the "means for generating a jitter parameter for each of a sequence of stored packets" is generating a jitter parameter for each of a sequence of stored packets, as claimed, or generating a jitter parameter for each packet of a sequence of stored packets.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1, 2, and 9, as may best be understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Cisco Systems, "Evaluate Network Performance with Cisco IOS® Service Assurance Agent" (Hereafter "Cisco") in view of U.S. Patent No. 6,665,317 to Scott and U.S. Patent Application Publication No. 2003/0086425 to Bearden et al.

With respect to claim 1, Cisco discloses a method of assessing speech quality transmitted via a packet based telecommunications network (i.e. voice over IP) (page 66) comprising the steps of storing a sequence of intercepted packets associated with a call (i.e. VoIP call) (page 70), each packet containing speech data (i.e. voice) (pages 8 and 66), and an indication of a transmission time of said packet (i.e. STx) (page 65); storing with each intercepted packet an indication of an intercept time of said packet (i.e. RTx) (page 65); extracting a set of parameters from said sequence of packets wherein the extracting step comprises the sub steps of generating a jitter parameter (i.e. JitterSD) for each of a sequence of stored packets in dependence upon the difference between the transmission time of a stored packet (i.e. ST2) and the transmission time of a preceding stored packet of the sequence (i.e. ST1); and the difference between the intercept time of said stored packet (i.e.

RT2) and the intercept time of said preceding packet (RT1) (page 65); and generating a plurality of other statistical jitter parameters (i.e. SumOfPositivesSD) for said stored packet in dependence upon said jitter parameter for said stored packet and said jitter parameter for any preceding stored packets (pages 66 and 72).

With respect to claim 2, Cisco also discloses determining a maximum value of the plurality of other statistical jitter parameters (i.e. MaxOfPositivesSD) (page 73).

With respect to claim 9, Cisco discloses an apparatus for assessing speech quality transmitted via a packet based telecommunications network (i.e. voice over IP) (page 66) comprising means, such as an object-oriented logic language probe in accordance with a process agent deployed and run on customer presence equipment (i.e. CPE) (pages 165-172) including a computer readable medium (i.e. memory) carrying the instruction to carry out the method when executed by a CPU (pages 143-144 and 154), for storing a sequence of intercepted packets associated with a call (i.e. VoIP call) (page 70), each packet containing speech data (i.e. voice) (pages 8 and 66), and an indication of a transmission time of said packet (i.e. STx) (page 65); means for storing with each intercepted packet an indication of an intercept time of said packet (i.e. RTx) (page 65); means for extracting a set of parameters from said sequence of packets wherein the means for extracting comprises means for generating a jitter parameter (i.e. JitterSD) for each of a sequence of stored packets in dependence upon the difference between the transmission time of a stored packet (i.e. ST2) and the transmission time of a preceding stored packet of the sequence (i.e. ST1); and the difference between the

intercept time of said stored packet (i.e. RT2) and the intercept time of said preceding packet (RT1) (page 65); and means for generating a plurality of other statistical jitter parameters (i.e. SumOfPositivesSD) for said stored packet in dependence upon said jitter parameter for said stored packet and said jitter parameter for any preceding stored packets (pages 66 and 72).

As noted above, the invention of Cisco teaches many of the features of the claimed invention and while the invention of Cisco does teach extracting a set of jitter parameters to assess speech quality of a VoIP network as well as determining a maximum of the extracted parameters, Cisco does not explicitly include means for determining a long term average or differential jitter parameter of the extracted parameters or generating an estimated mean opinion score in dependence upon said set of parameters.

Scott teaches a method, system, and computer program product for managing jitter of packets across a VoIP system (column 1, line 65 to column 2, line 2) that uses a sliding window to calculate a long term jitter parameter in dependence upon a value of jitter for a stored packet and a value of jitter for any preceding stored packets (column 5, lines 22-23 and 41-46) and a differential jitter (i.e. jitter variance) in dependence upon the jitter parameter and the long term jitter parameter (column 5, lines 22-25).

Bearden teaches network traffic generation and monitoring systems and methods for their use in testing frameworks for determining suitability of a network for target applications, such as VoIP network applications (0006, lines 1-10), comprising

means for extracting a set of speech quality parameters, including jitter, and, generating an estimated mean opinion score in dependence upon the set of speech quality parameters (0085, lines 1-13).

It would have been obvious to one having ordinary skill in the art to modify the invention of Cisco to explicitly include means for determining a long term average and differential jitter parameter of the extracted parameters, as taught by Scott, because, as suggested by Scott, the combination would have improved the speech quality analysis of Cisco by determining a more complete group of jitter parameters including a jitter variation which would provide an indication as to the changes in the size of a packet from the start to destination thereby allowing the user to monitor such a size change for determining a point of insufficient quality (column 3, line 66 to column 4, line 4).

It would have been obvious to one having ordinary skill in the art to modify the invention of Cisco to explicitly include means for generating an estimated mean opinion score in dependence upon said set of parameters, as taught by Bearden, because, as suggested by Bearden, the combination would have improved the speech quality analysis of Cisco by employing a widely used, accepted, and understood scale of speech quality (0085, lines 1-13) and reducing the burden of a user to interpret the jitter results by instead providing the result in a clearly understandable numerical index of quality (0238, lines 24-38).

10. Claims 3-5, as may best be understood, are rejected under 35 U.S.C. 103(a) as

being unpatentable over Cisco in view of Scott and Bearden et al. and further in view of U.S. Patent Application Publication No. 2003/0018450 to Carley.

As noted above, Cisco in combination with Scott and Bearden teaches many of the features of the claimed invention and while the invention of Cisco, Scott, and Bearden does teach extracting a set of parameters from a sequence of packets including a jitter parameter, long term average jitter parameter, differential jitter parameter, and maximum value of the plurality of extracted parameters, the combination does not specifically include determining a variance value of the measured parameter and a subsequent average of the maximum and/or variance value.

Carley teaches a system and method for providing composite variance analysis for network operation of a packet based network (0002, lines 1-9 and 0017, line 1 to 0024, line 3) comprising means for extracting and storing a jitter parameter performance metric for a sequence of packets (0041, lines 1-23) determining a variance statistic for the performance metric and determining a subsequent standard deviation of the determined variance statistic (0047, line 4 to 0048, line 7), wherein the variance statistic includes a plurality of maximum values and standard deviations of sub-sequences of the performance metric (0068, lines 11-19). Therefore, Carley teaches determining both a maximum of the performance metric followed by a standard deviation of the maximum as well as a standard deviation of the performance metric followed by a subsequent standard deviation. It is further considered inherent that in order to determine each standard deviation, an average

and variance must first be determined (see for example, Internet Glossary of Statistical Terms, "Variance" and "Standard Deviation").

It would have been obvious to one having ordinary skill in the art to modify the invention of Cisco, Scott, and Bearden to include determining a variance value of the measured parameter and a subsequent average of the maximum and/or variance value, as taught by Carley, because the invention of Cisco, Scott, and Bearden does teach a method for assessing the quality of speech packets but provides no significant method for determining when a speech quality degrades below a desired level and the invention of Carley suggests that the combination would have improved the method of Cisco, Scott, Bearden and by allowing the user to determine the quality with greater detail by determining how the performance of a given network server is performing with respect to any desired performance metric over time as well as determine whether the performance of a network service at any particular time is outside of acceptable limits (0040, lines 1-28).

Response to Arguments

11. Applicant's arguments filed March 20, 2006, have been fully considered but they are not persuasive.

With respect to the specification objection and the rejection of claims 1-5 and 9 under 35 U.S.C. 112, first paragraph, Applicant argues:

> It is respectfully noted that the equations on page 12-13 and corresponding description of the calculation of calculation of a long term average would be quite clear to one skilled in the art. Persons skilled in the art are very familiar with

programming equations in a computer programming language and are used to seeing equations such as:

i = i + 1

which means the variable i is increased by one.

The equation:

lt_jitter = (lt_jitter * P) + (absjitter) * (1-P))

means that the long term jitter becomes equal to the previous value of the long term jitter multiplied by P plus the absolute value of the jitter multiplied by 1-P.

The Examiner agrees that the equation "lt_jitter = (lt_jitter * P) + (absjitter) * (1-P)) means that the long term jitter becomes equal to the previous value of the long term jitter multiplied by P plus the absolute value of the jitter multiplied by 1-P". However, with only this equation given to determine the long-term jitter and no indication as to what constitutes an initial/previous value of the long term jitter, it is unclear to one having ordinary skill in the art how to use the equation to determine a long-term jitter.

The Examiner maintains that the equation provided for determining the "long term average jitter" requires a long term average jitter as an input to the equation. Since there is no apparent value of long term average jitter to be used as an input for the right side of the equation, it is unclear to one having ordinary skill in the art how to use the equation as described.

With equation manipulation, the equation can further be analyzed. Using such equation manipulation, the following can be derived:

When P = 1:

lt_jitter = (lt_jitter * P) + (abs (jitter) * (1 – P))

lt_jitter = (lt_jitter * 1) + (abs (jitter) * (1 – 1))

lt_jitter = (lt_jitter) + (abs (jitter) * (0))

lt_jitter = (lt_jitter)

When P ≠ 1:

lt_jitter = (lt_jitter * P) + (abs (jitter) * (1 – P))

lt_jitter – (lt_jitter * P) = (abs (jitter) * (1 – P))

lt_jitter * (1 – P) = (abs (jitter) * (1 – P))

lt_jitter = abs (jitter).

The result of the manipulation indicates that when P = 1, one having ordinary skill in the art has no way to determine the "long term average jitter" and when P ≠ 1 the "long term average jitter" is actually the absolute value of the jitter and not any type of average.

Turning back to the specification and drawings, it is disclosed generating a resulting mean opinion score in dependence on statistical analysis (i.e. average of a maximum/variance) of the resulting "differential jitter". However, the "differential jitter (jitter_differential)" is defined as:

jitter_differential = abs (jitter) – lt_jitter

As noted above in the equation for lt_jitter, when P=1, the equation provides no useful result, but when P ≠ 1, lt_jitter = abs (jitter).

Substitution of this value in the equation for "differential jitter" reveals:

jitter_differential = abs (jitter) – abs (jitter) = 0.

Therefore the specification does not appear to adequately describe to one having ordinary skill in the art the method for determining a mean opinion score from statistical analysis of a "differential jitter" when the "differential jitter" is always zero.

Applicant then argues:

> The claims recite generating a long term average jitter parameter. In accordance with the present invention, it has been discovered that a long term average jitter parameter is a useful parameter for generating an estimated mean opinion score for assessing speech quality transmitted via a packet based telecommunications network.
>
> Cisco and Beardon both relate to evaluation of network performance. Cisco and Beardon both refer to jitter, but neither discloses or suggests a long term average jitter parameter and neither document discloses or suggests that such a parameter would be a useful measure for assessing speech quality.
>
> Scott relates to a methods and systems for managing jitter. Scott discloses use of a parameter known as jitter variation, but there is no suggestion in Scott that this parameter would be useful for assessing speech quality in a voice over IP network.

The Examiner maintains that Scott teaches a method, system, and computer program product for managing jitter of packets across a VoIP system (column 1, line 65 to column 2, line 2) that uses a sliding window to calculate a long term jitter parameter in dependence upon a value of jitter for a stored packet and a value of jitter for any preceding stored packets (column 5, lines 22-23 and 41-46) and a differential jitter (i.e. jitter variance) in dependence upon the jitter parameter and the long term jitter parameter (column 5, lines 22-25).

The Examiner also maintains the combination of Cisco and Scott since Cisco does teach extracting a set of jitter parameters to assess speech quality of a VoIP

network as well as determining a maximum of the extracted parameters but does not explicitly include means for determining a long term average or differential jitter parameter of the extracted parameters and, as suggested by Scott, the combination would have improved the speech quality analysis of Cisco by determining a more complete group of jitter parameters including a jitter variation which would provide an indication as to the changes in the size of a packet form the start to destination thereby allowing the user to monitor such a size change for determining a point of insufficient quality (column 3, line 66 to column 4, line 4).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure:

Internet Glossary of Statistical Terms, "Variance" and "Standard Deviation" teaches the definitions for "Variance" and "Standard Deviation" as well as that in order to calculate the variance, a mean/average must first be determined, as well as that in order to calculate the standard deviation, a variance must first be determined.

Rix, et al, "The perceptual analysis measurement system for robust end-to-end speech quality assessment" teaches an objective model designed to evaluate the perceived speech quality of voice over IP.

Rix et al, "Perceptual evaluation of speech quality (PESQ)-a new method for speech quality assessment of telephone networks and codecs" teaches a new

model for speech quality assessment for use across a wider range of network conditions including analog connections, packet loss and variable delay.

U.S. Patent Application Publication No. 2003/0072269 to Teruhi et al. teaches a data transmission control method, program therefore and data transmission unit for determining packet quality.

U.S. Patent Application Publication No. 2002/0141392 to Tezuka et al. teaches a gateway apparatus and voice data transmission method.

U.S. Patent Application Publication No. 2002/0051464 to Sin et al. teaches a method for monitoring the quality of transmission across packet-based networks.

U.S. Patent No. 6,928,473 to Sundaram et al. teaches a method for measuring network jitter on application packet flows.

U.S. Patent No. 6,363,429 to Ketcham teaches a method and system for automatic determination of priority data streams on computer networks.

U.S. Patent No. 6,327,274 to Ravikanth teaches a method for estimating relative skew between clocks in packet networks.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jrw
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MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800